

ROYCE ALLER HARDY: REMINISCENCE AND A SHORT AUTOBIOGRAPHY

Interviewee: Royce Aller Hardy

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Description

Roy A. Hardy was born in South Dakota in 1886. Having been raised in mining camps, he went to Tonopah and Goldfield in 1905 during their boom days. There, he knew or met many of the leading figures of the day: Jim Butler, Harry Stimler, Tex Rickard, Charles Schwab, and George Wingfield. The early meeting with Wingfield began a business association that lasted for forty years. His major activities have always been in mining and prospecting. A brief tenure on the University of Nevada Board of Regents was his only venture into public office.

After completing his education at the University of Nevada Mackay School of Mines, Hardy returned again to mining. Times had become harder; the mining booms in western and central Nevada were past. He became a consultant and active mining engineer, reevaluating and rebuilding worked-over mines, and—occasionally—discovering a new one. With his partner, Alex Wise, Hardy tried to revive the Comstock in the 1920s, and built an extensive plant and mill at American Flat. Other places he worked included Wonder, where he became friendly with Vernon Adams and his small daughter, Eva. Hardy and his wife, the former Bonnie Thoma, lived and worked in several more mining towns and prospects, the best of which, according to Hardy, was the Getchell mine in Humboldt County.

It was through Hardy's efforts during his tenure as a regent of the University of Nevada that the Jot Travis Student Union on the university campus came into being—one of his proudest achievements. A long acquaintance with the family of the late Jot Travis allowed Regent Hardy to convince Wesley E. Travis, Jot Travis's son, that he should endow the building at the university in honor of his father.

Roy Hardy's oral history is not a long story. His extreme modesty prevented him from including some of the more colorful aspects of his life and the honors that he had earned. Hardy's reminiscences include geological evaluations of the various mining camps in which he had worked, brief sketches of some of the famous men he had met, and snatches of everyday life in the mining towns.

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An Oral History Conducted by Mary Ellen Glass

University of Nevada Oral History Program

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PREFACE TO THE DIGITAL EDITION

Established in 1964, the University of Nevada Oral History Program (UNOHP) explores the remembered past through rigorous oral history interviewing, creating a record for present and future researchers. The program's collection of primary source oral histories is an important body of information about significant events, people, places, and activities in twentieth and twenty-first century Nevada and the West.

The UNOHP wishes to make the information in its oral histories accessible to a broad range of patrons. To achieve this goal, its transcripts must speak with an intelligible voice. However, no type font contains symbols for physical gestures and vocal modulations which are integral parts of verbal communication. When human speech is represented in print, stripped of these signals, the result can be a morass of seemingly tangled syntax and incomplete sentences—totally verbatim transcripts sometimes verge on incoherence. Therefore, this transcript has been lightly edited.

While taking great pains not to alter meaning in any way, the editor may have removed false starts, redundancies, and the “uhs,” “ahs,” and other noises with which speech is often liberally sprinkled; compressed some passages which, in unaltered form, misrepresent the chronicler's meaning; and relocated some material to place information in its intended context. Laughter is represented with [laughter] at the end of a sentence in which it occurs, and ellipses are used to indicate that a statement has been interrupted or is incomplete...or that there is a pause for dramatic effect.

As with all of our oral histories, while we can vouch for the authenticity of the interviews in the UNOHP collection, we advise readers to keep in mind that these are remembered pasts, and we do not claim that the recollections are entirely free of error. We can state, however, that the transcripts accurately reflect the oral history recordings on which they were based. Accordingly, each transcript should be approached with the

same prudence that the intelligent reader exercises when consulting government records, newspaper accounts, diaries, and other sources of historical information. All statements made here constitute the remembrance or opinions of the individuals who were interviewed, and not the opinions of the UNOHP.

In order to standardize the design of all UNOHP transcripts for the online database, most have been reformatted, a process that was completed in 2012. This document may therefore differ in appearance and pagination from earlier printed versions. Rather than compile entirely new indexes for each volume, the UNOHP has made each transcript fully searchable electronically. If a previous version of this volume existed, its original index has been appended to this document for reference only. A link to the entire catalog can be found online at <http://oralhistory.unr.edu/>.

For more information on the UNOHP or any of its publications, please contact the University of Nevada Oral History Program at Mail Stop 0324, University of Nevada, Reno, NV, 89557-0324 or by calling 775/784-6932.

Alicia Barber
Director, UNOHP
July 2012

INTRODUCTION

Roy A. Hardy was invited to participate in the Oral History Project of the Center for Western North American Studies early in 1965. He accepted the invitation reluctantly, but graciously, declaring that his life story was too unimportant to construct a worthy interview.

Hardy has lived most of his life in Nevada, and all of his life in the West. His major activities have always been in mining and prospecting. A brief tenure on the University of Nevada Board of Regents was his only venture into public office. When he was a young man, Roy Hardy came to Nevada, and lived first at Tonopah and Goldfield at the height of the twentieth century mining boom in that area. He knew or met many of the leading figures of the day: Jim Butler, Harry Stimler, Tex Rickard, Charles Schwab, and George Wingfield. The early meeting with Wingfield began a business association that lasted for forty years.

After completing his education at the University of Nevada Mackay School of Mines, Hardy returned again to mining. Times had

become harder: the mining booms in western and central Nevada were past. He became a consultant and active mining engineer, re-evaluating arid rebuilding worked-over mines, and-occasionally—discovering a new one. With his partner, Alex Wise, Hardy tried to revive the Comstock in the 1920's, and built an extensive plant and mill at American Flat. Other places he worked included Wonder, where he became friendly with Vernon Adams, and his small daughter, Eva. Hardy and his wife, the former Bonnie Thoma, lived and worked in several more mining towns and prospects, the best of which, according to Hardy, was the Getchell Mine at Scheelite, Nevada.

It was through Hardy's efforts during his tenure as a regent of the University of Nevada that the Jot Travis Student Union on the University campus came into being—one of his proudest achievements. A long acquaintance with the family of the late Jot Travis allowed Regent Hardy to convince Wesley E. Travis, Jot Travis' son, that he should endow the building at the University in honor of his father.

Roy Hardy's oral history is not a long story. His extreme modesty prevented him from including some of the more colorful aspects of his life: he was sure that these events were not worth recording. Moreover, he did not mention honors that he had earned, including two honorary degrees from the University of Nevada. He is a thirty-third degree Mason, and a member of the SAE fraternity at the university.

On April 23, 1965, with a sheaf of handwritten notes in his pocket, Hardy visited the office of the Center for Western North American Studies. He read from the notes and answered questions for about two hours that afternoon. The reminiscences included geological evaluations of the various camps in which he had worked, brief sketches of some of the famous men he had met, and snatches of every-day life in the mining towns.

The Center for Western North American Studies Oral History Project attempts to preserve the past and the present for the future by tape recording reminiscences of persons who have participated in significant aspects of the development of the West. Other oral histories in preparation or finished include: Lucy Davis Crowell's social and political history of Carson City, educational history by Earl Wooster, social and political history by Justice Milton Badt of the Nevada Supreme Court, economic and social history by Lester J. Hilp of Reno, Charles H. Russell's social and political history from the point of view of a former Governor of Nevada, Charles D. Gallagher's social history of White Pine County, and a social, educational, political and economic reminiscence by Silas E. Ross.

Mary Ellen Glass
University of Nevada
August, 1965

CHAPTER ONE

My name is Royce Aller Hardy. I was born in South Dakota in 1886. My father's name was Charles William Hardy. My mother's maiden name was Minnie Aller. My parents were Iowans. They were married in Marshalltown, Iowa, when my mother was seventeen years old and my father was twenty-two. His father was in the leather business during the Civil War and afterwards.

After my parents were married they went to South Dakota. I was born on a little ranch near Kimball, South Dakota and taken to Colorado when I was about three or four years old. I was raised in mining camps. I went to grammar school in Cripple Creek, Colorado, and Leadville, Colorado, and later to high school in Denver. I transferred in 1900 to Los Angeles High School in Los Angeles. By the way, I believe that was the only high school in Los Angeles at that time, strange as it may seem now.

I just have a hazy recollection of the grammar schools. I remember the teachers were very good disciplinarian., also good teachers. Cripple Creek was at the height of

its boom in 1893, and there were three or four grammar schools in Cripple Creek besides a high school. I attended the grammar school in Cripple Creek and the East Denver High School in Denver, Colorado.

Having been raised in a mining camp, I thought It would be a good thing to go to Tonopah during the Room. When I went there in 1905, it was still booming, and Tonopah, at that time, was the second or even the largest city in the State. It was the most active town in Nevada. While there I met many of the men who were interested in mining and boom excitements. Among them I will name a few. I met Jim Butler (discoverer of Tonopah), George Wingfield, George Bartlett, George Thatcher, ex-Senator William M. Stewart who was our first United States Senator. I also met Key Pittman, Cal Brougher, Tasker L. Oddie, Zeb Kendall, Charles Schwab, owner of Bethlehem Steel, and his engineer, Don Gillis, who was later vice president of Republic Steel, Frank Horton, father of the two Horton boys in Reno (Bob and Dick), and many others. From the sporting world I

met Tex Rickard and Ole Elliott. They had the Northern Saloon in Goldfield. Then later, Tex Rickard ran Madison Square Garden In New York.

The Northern Saloon in Goldfield was something like Harold's Club in Reno. It was a meeting place for all the miners, and they could drop their money there very easily. Rickard promoted the Nelson-Gans fight there in 1906 . Ole Elliott went to Ely, where he owned the Northern Hotel and also the Nevada Hotel until a few years ago.

There were many adventurers In Tonopah and Goldfield at that time. One in particular who impressed me was Johnny Poe of the Edgar Allen Poe family. He was a little wild, and always in mischief. One time he went to Rhyolite when it first started in 1906, and while there he was in a saloon with some of his pals somebody tore the American flag down off the wall. That created a riot! Afterwards, Johnny Poe went to South America to one of those South American revolutions. He had to make a quick exit from that country. When ho got to the seashore, he made arrangements with a captain of a boat to take him away. When he got on board, the captain asked about his luggage. Johnny said it was with him, and that it was fifty-two pieces. It was a deck of cards.

George Bartlett was just over from Austin. He used to drive around Tonopah in a little buckboard with his hair flying. He was a character. I remember him here in Reno in later years, around 1910, when President Theodore Roosevelt was in town. George Bartlett (a Nevada congressman) was a Democrat and Roosevelt, of course, was a Republican. Bartlett was the only man in Reno Roosevelt asked for, that impressed me. Roosevelt made sandwiches down at Powning Park for the crowd that was there to hear him talk.

Cal Brougher was one of the first corners in Tonopah. Mt. Brougher was named after Cal and Mt. Oddie is named after Tasker Oddie.

Sometime before I knew him, William M. Stewart, our first United States senator, had been in Alaska investigating the scandals of Nome. It isn't generally known, but when Senator Stewart reported in the United States Senate his findings of the Nome scandals, they had to expunge it from the records and put it into a language that was acceptable. He was a tall heavy-set man with a long, white beard; a man about six foot three who weighed over two hundred pounds. He was trying to stage a financial comeback. He was before that the principal attorney during the Comstock Boom in the 1860's-1870's and represented most of the miming companies there. He had at least as much to do with organizing the State of Nevada as any man. While he was on the Comstock, Mark Twain was his secretary for awhile. He said Twain was just a "scamp" as he called him, always in trouble. While Senator Stewart was in Washington, he wrote the Fifteenth Amendment, and he also wrote the present mining laws. These are the mining laws we operate under today. He had a foghorn voice. I met him in Rhyolite when he had a little office there. Me was mining in the Panamint Range and also in the Mother Lode in California. I had a cabin near his. In his little stone office building in Rhyolite he used to write his memoirs. With that foghorn voice, I could hear him write a sentence and repeat it to himself. That was his autobiography, and if you haven't read it you should. He was a dynamic person. Be took charge when he was around; everybody knew he was there.

Schwab went to Rhyolite with his engineer, Don Gillis, and opened up the Montgomery-Shoshone Mine and built a mill. He was interested in the Tonopah Extension Mine.

Re was, as I recall, very affable and seemed to get along with everybody, and everybody liked him.

Tasker Oddie was the first manager of the Tonopah Mines for Butler. He was an attorney who caste out to Austin to straighten out the affairs of the Stokes Estate. Oddie went to Tonopah and gave leases to miners of small plots of ground on Mizpah Mine property. He gave one to Zeb Kendall. Zeb Kendall made a fortune there in a very short time. None of the leases had a written agreement; they were all verbal. But Oddie kept his word, and the leases were alive until the time they expired. He never questioned the validity of the verbal leases, even though some of them, like Kendall, made several hundred thousand dollars in a few months.

I know well George Wingfield's history in this State. He was born in Arkansas and went to Lakeview, Oregon as a young man, and also to a town called Looking Glass in Oregon. He went to school in Lakeview. When he was about twenty year. old, he was made foreman of a cattle ranch in Lakeview. He drove a couple of thousand head of cattle from Lakeview to Winnemucca, where afterwards he stayed. While he was in Winnemucca he met Herbert Hoover. He and Mr. Hoover used to ride a little ore train out of Golconda, which is seventeen miles from Winnemucca. They would go out to the Adelaide Mine owned by the Coats Thread people of Scotland. That friendship continued until the time Wingfield died.

George Wingfield had quite a bit of property in southern Nevada and was a heavy stockholder in the Belmont mines and other mines in Tonopah. When Goldfield was founded, he got in on the ground floor and actually paid one million dollars cash for one of the properties in Goldfield before he consolidated all the properties into the

Goldfield Consolidated Mines Company. A million dollars was a lot of money in those days. Mr. Wingfield was president of the Goldfield Consolidated Mines Company until he died in 1959.

I first met George Wingfield in 1905. I worked in the Goldfield Consolidated Mines for awhile before I went to the University of Nevada, Mackay School of Mines. After 1910 I left the School of Mines, I went to work for him again at Nevada Hills Mine. altogether I was associated with George Wingfield for over fifty years. People have more or less maligned him at different times, but he was one of the finest characters I ever met. He was a man who never swore, strange as it may seem, and he always kept his word. He didn't have to have a written paper. He had no aspirations himself for a political office. In fact, Tasker Oddie, when he was Governor, appointed George Wingfield to the United States Senate when Senator Massey died, but Mr. Wingfield refused the appointment. All he wanted was to have Nevada prosper. He gave Reno property for Island Avenue from Virginia Street to Sierra Street, and the area in the rear of his home, and also Wingfield Park as well as other property in Reno. He also built hotels and office buildings in Nevada.

Wingfield was in the banking business with George Nixon. In fact, George Nixon staked him to go to Tonopah. When Nixon loaned him the money, Mr. Wingfield said that Nixon would be his partner in everything he acquired in southern Nevada. Nixon made millions from that partnership. Mr. Wingfield was interested in mines, and at times he had many prospectors out in the state looking for mines. He had properties in Canada as well as in Nevada. He also started the rice industry in California with rice seed from Louisiana. He developed and built the Sutter Butte Canal

system which had about one hundred miles of canals around Chico and Oroville, California.

Wingfield was very active during his adult life, but without much fanfare. He didn't like publicity. In later years, he formed a mining partnership with Noble Getchell. After the bank failures, the Getchell mines put him back on his feet again financially.

When I was a young chap in Tonopah working for the mines, some of my work was to go out sapling prospects. I had a teas and a buckboard with a barrel of water and I would go around to different prospects covering the area from southern California, near Yuma up into Utah. I met Louis Gordon at Round Mountain in the winter of 1905 when I was on one of those trips. Louie Gordon was just out of Annapolis at that time and a magnificent looking fellow. He was born in the Smokey Valley so Round Mountain was right near his home. He later became president of the Round Mountain Mines Company, and continued as president until he died in 1964.

During that period in Tonopah, in 1905, Dan Jackling and Mark Requa were doing metallurgy on some low-grade copper ore; Jackling in Utah and Requa in Ely, Nevada. Until that time, all the copper mining in the United States and practically in the world was from fissure veins, small veins, by underground methods. With the results of Jackling's work in Utah, the porphyry coppers were developed; but they both came up with the same answer at about the same time; that is, methods of handling very low grade disseminated copper ore in large deposits. That really started the open-pit mining on a large scale in Nevada and Utah. (Mark Requa was born in Six-Mile Canyon below Virginia City and his father, Isaac Requa, was superintendent of the Hale and Norcross. My wife's uncle, Mr. Gilman, was Isaac Requa's secretary at Virginia City.) It

was a coincidence that Jackling and Regna came up with the answer at about the same time, Mark Requa in Ely on the ores there, and Jackling at Bingham Canyon. Before that time there was open-pit mining of iron ore on the Iron Range in Michigan, and around the Great Lakes, but the solving of the metallurgy problem of disseminated coppers started the big copper mines in the West.

After being around Tonopah and Goldfield, I came to the Mackay School of Mines when Mackay dedicated the School. George G. Young was the Dean of the School of Mines at that time. Along with my studies, I played Rugby football for the years I was there. During one of the Rugby games on the Mackay Field (the field wasn't turfed) we had Clarence Mackay out on the field in football clothes. We kind of roughed him up, and he wondered why the field wasn't turfed. It has been turfed ever since.

I took a Spanish course from a Miss Laura de Laguna. I was the only one in her class. She taught only Castilian Spanish, so when I was in Mexico I had to learn some idiomatic Spanish. I had classes with Tanglefoot Smith in geology and also with Jones; they called him Geology Jones. Tanglefoot Smith was before Jones. Effie Mona Mack was in a mineralogy class with vs. James C. Scrugham was the Dean of the Engineering College. Captain Brambilla was the Commandant of the military. I lived at Lincoln Hall. Professor Dick Brown was the Dean of Men.

As far as University buildings were concerned, we had Morrill Hall and Stewart Hall, Hatch Hall, the old electrical building, the stone chemistry building near the new Mackay School of Mines, and the new Mackay Field and Club House. President Stubbs was head of the University. Jeff Boardman taught civil engineering. The quad was just about the same as it is now.

My wife, who was Bonnie Thoma, was taking a course at that time. The University had a preparatory school and she had been at Miss Head's school. She took a preparatory course also at the University. I met her at a Junior Prom.

I should mention some of the University men students at that time were Silas Ross, Rich McDonald, Dudley Homer, Dick and Elsworth Bennett, Ernie Folsom, Spike Henderson, Walter Anderson, Earl Hart, and Melvin Jepson.

In 1910 I thought I had better go out and earn a living, and also thought mining was the way of life. I wanted to get married, and I had some engineering knowledge. So I got a job at Fairview, Nevada, engineering, surveying, sampling and geology for the Nevada Hills Mine out of Fallon. The principal owner was George Wingfield. I stayed there until 1915. I got to be mine superintendent and manager.

In 1913, I married Bonnie Thoma whose father was Dr. George H. Thoma. He came to Nevada in 1866. He was a doctor in the Civil War and was with General (U.S.) Grant at the surrender at the Appomattox Court House. Dr. Thoma came to Nevada, walking most of the way from Salt Lake City to Austin, Nevada, and went to work in the mines there. When somebody recognized him as a doctor, he had to hang out his shingle, he practiced in Austin, Eureka, and Hamilton until 1887. While at Eureka, he was State Senator. He liked politics, and was always in the thick of things, but never sought any office except State Senator. He was very active in the Masonic Order in Reno and in Austin and Eureka.

I might say something about the Nevada Hills Mine. I took my bride there to the side of that mountain in 1913 and stayed there until 1915, when I became the manager of the Aurora Consolidated Mines of Aurora,

Nevada. The Nevada Hills Mine was located and discovered about 1906. Some very rich silver ore was found: as high as a thousand ounces of silver per ton. The mineral cerargyrite, which is a chloride of silver, was found in the croppings with some gold. The ratio of silver to gold was about a hundred ounces of silver to one ounce of gold. The Nevada Hills had a very strong fissure vein on the slope of Fairview Peak. After several high grade shipments were made, a modern all-slime cyanide mill was built, milling one hundred and fifty to two hundred tons per day and using twenty twelve hundred and fifty-pound stamps. The mill was located between the Nevada Hills vein and the Eagle vein. The property was profitable. The manager of the Eagle Mine was John Fulton who later was Dean of the School of Mines at the University of Nevada. The mill was served by a three compartment shaft which was located at the head of the mill. The skips dumped the ore directly into the mill. At about one hundred foot depth of the vein, the silver ores gave way to silver sulfide ores, principally argentite along with other silver sulfide, in the association with little gold.

The Eagle carried the same values as the Nevada Hills Mine. The Eagle vein ore was characterized by pink manganese minerals; rhodenite in a silicate of manganese. Both veins were fissures in tertiary adesite. The Nevada Hills was a fissure vein striking northeast and dipping out sixty-five degrees southeast, and bottoming just below the nine hundred foot level on a strong parallel quartz vein dipping in the opposite direction, which the Dean of the University of California, Andy Lawson, called the blout—a contraction of blow-out.

The Nevada Hills Mill was housed in an all-steel building. The machinery was hauled from Fallon with jerkline teams of twelve to

sixteen horses over the mud flats out of Fallon, taking about three days to make the trip. The mill was a twenty stamp mill with Pachucca agitators, using countercurrent decantation followed by Oliver filters, which discharged a nearly dry, barren cake to a tailings pile. When the vein bottomed in 1916, milling ceased and nothing more has been done there, I understand.

The housekeeping in rainier was really pioneering. We had a shack, with a cooking-and-eating room and a sitting— and-sleeping room. I used to carry the water about a half a mile, and as the saying goes, we took spit baths to save water. There was one piano and a phonograph in the camp. Mrs. Hardy played the piano, and when we had dances she played for them. While we were there, Vernon Adams, the father of Eva Adams, was the surface superintendent and Eva Adams was (I don't want to give her age away) very young and as charming then as she is today as Superintendent of the United States Mint.

There were about four or five women in camp. They played lots of bridge. I was so anxious to hold my job that I used to work night and day. I would go in on the shift in the morning and come out in the afternoon and go back on the shift at night, so that didn't leave much time. While there, we had a company automobile. I used to take Bonnie, my wife, down on the flat at Frenchy's, where I taught her to drive. The mine had a baseball team, and we used to play baseball with different teams from mines like the Betty O'Neal Mine, Wonder Mine, and Fallon.

Dr. Farrell was company doctor, and had a little hospital with Dr. William Riley. There was a church and a school. A graduate of the University was a teacher there at that time. I have very pleasant recollections of being out there.

For water for the mill, we built a pipe line from Westgate, about thirteen miles away. The water was hardly sufficient for the mill, so we couldn't pipe it into the house; we had to use it all for milling purposes.

I left the Nevada Hills in 1915 to manage the Aurora Consolidated Mines of Aurora, Nevada, in Mineral County. That is a historical, and famous camp. It was made famous by Mark Twain in Roughing It when he was a millionaire there overnight only. Jim Cain of Bodie interested the Jesse Knight interests of Salt Lake City in the property, which was purchased by the Goldfield Consolidated. The mine had several strong veins, among them were the Catawampus vein, the Humboldt vein, the Juniata, and the Wide West. These were quartz fissure veins of a very low value, principally in gold. The haulage tunnel was driven about a mile to intersect these different veins with the Juniata vein near the face of the tunnel. These veins were all in tertiary andesite flows, and seemed to lose the quartz a short distance below the haulage tunnel. Mining was done by the shrinkage method.

The Aurora Consolidated Mines erected a company town of about forty-five cottages among the piñon pine trees. The company erected a five to six hundred ton all-slime cyanide plant, and stamp mill of forty stamps that weighed about sixteen hundred and fifty pounds apiece. Of course, stampmilling is obsolete now. The stamps were fed by a crusher, and the crushed material was ground through an eighty mesh screen in four, six-by-eight-foot cylindrical mills.

The Aurora Consolidated was the first to use the autogenous grinding method which is now coming into vogue. We also had tray thickeners with the trays being made of wood, which caused considerable trouble. When the trays got soaked up they would collapse. They

were the first tray thickeners used in a cyanide plant. They are now made of steel.

While manager of the Aurora Consolidated, I had a letter from one of the University students asking me for a position, so I told him to come right out. He got there one afternoon when a thickener was broken down, and he worked all that afternoon and nearly all night. The next day was Saturday, and he was tired. He liked to box, and in the camp we always had a money prize for boxing. So without much rest he went in the ring. Later, he said he had a hard time knocking his opponent out. That was Nevada's late U. S. Senator Molly (George W.) Malone. He always held it against me for having him work that night, but it was good experience for him.

The mill had a Trent filter which was a new innovation. It was built like a Ferris wheel with shallow trays to do the filtering and dump the product as they made the circle. They were a dismal failure so they were replaced with two one hundred-foot Merrill Slime Presses.

The winters were so severe from November to about May, that we would take our cars down on the flat in the valley below the mill and leave them there until May when we could use them again. The snow got deep, but the mines worked all the time. Vernon Adams ran the surface job. He was there for awhile when I operated this mine during the first World War. During this period I was also given the management of a mine in Arizona, on the Mexican border thirty-five miles west of Nogales, called the Montano Mine. It was a lead, zinc, silver, gold mine in Santa Cruz County.

Aurora was a very pleasant place to be. In the summer, families organized picnics around Bridgeport. And in the mountains, there was plenty of fishing. The Company built the cottages for the families. I always

claimed they bought the mine because of one cottage. It was a beautiful cottage with a fireplace about six feet in width. The mantel piece was a stone from the Wide West Mining Company and carved in it was "Wide West Mining Company, 1862". This cottage was very comfortable and we enjoyed living in it.

Employees had dances and card parties. In the wintertime, they would strap on skis and try to ski. They weren't real skis, but were more or less like bed slats. They were like the old-time skis, I guess. The old town of Aurora was over the mountain from the mill. Several families lived there who would ski over to the mine to the dances. We also had a small school. Altogether we lived a normal life.

During the era of big production in Tonopah, many Slavonians came from Europe to Tonopah and to different mines and camps in Nevada. There were also many Montenegrins and other nationalities. We had very efficient miners. Before that, in the Comstock days, it was the Irish and the Cornishmen. Then came along the Slavonians, and later the Italians arrived as miners.

Next, I went to the Montano Mine in Arizona. I was in charge then of both the Aurora Consolidated Mine and the Montano Mine near Nogales. The Montano milling plant at Ruby was a two hundred-ton per day concentrating plant, housed on a two-story wooden building and powered by a horizontal semi-diesel engine along with a Corliss engine. The flow sheet incorporated flotation. At that date, about 1916, this was one of the earliest flotation plants in the country. The reagents used in that early flotation process consisted principally of plain fuel oil and pine oil for frothing and collecting. This was a lead-zinc, silver-gold plant. The flotation separated lead and zinc sulphides. We made an eighty percent lead concentrate and a fifty-six percent zinc concentrate. The prices of lead

and zinc were about the same then; about six cents a pound.

Needless to say, the concentrate didn't produce any great amount of profit. It was during the period of the first World War and the Government wanted the lead and zinc.

In getting that operation going, it was necessary to construct a thirty-five mile truck toad to the railroad near Nogales. This was a road without many tangents. Hard rubber-tired trucks were used. We also had to construct a concrete dam or reservoir to catch the run-off for milling purposes. The mine employed several hundred miners.

We shipped the lead concentrate to El Paso and the zinc concentrate to Bartlesville. The mine had a flat, forty degree dipping fissure vein in replaced limestone. The mining was discontinued right after World War I. Later in the thirties the Eagle-Picher people mined for several years in this mine.

I took my wife, Bonnie, down to the Montano Mine after I had built several adobe houses for the married people. The adobes were very crude. Z got the best Mexico I could to build the fireplaces. I was sure I was doing something nice for my bride, but the fireplaces all smoked. Again, we had a cooking-eating room and a sitting-sleeping room.

The Yaqui Indians used to raid through that camp. They got contraband ammunition up around Tucson, and they would come through the town of Ruby where the mine was located. All the surface employees carried side arms. I got a machinegun down there, and I used to take Bonnie out in the hills to practice shooting it. You could see the Mexicans dodging behind rock, watching us. About every hundred rounds, the machinegun would jam, and we would try to get it going as soon as possible because we were always afraid of a raid. But the Yaquis were more likely to come and take the gun away from

us more than anything else. It was at the time that Pershing was trying to have Villa salute the flag and all that. During that trouble, the miners were on strike at Bisbee, Arizona, I got fifty of them to come over to work in the mines at Ruby. We got more work done with those miners than with all 300 Mexicans we had.

Again, we were pioneering; no electricity, and water was scarce as was usual in mining camps. There used to be a Mexican boy delivering the water. Bonnie said one day that the water didn't taste right, and asked me to go find out where he got the water. It was at the foot of a little hill, and up on the hill just above was a hog pen; so I had to fix that up pronto.

Years later, when the Eagle-Picher was operating at Ruby, Bonnie was talking to some of the ladies who were out there. It had all been modernized. They had running water; they had electricity and all the conveniences. Of course, they also had good cars, which we didn't have in those days. One of the ladies was telling Bonnie about living out there and pioneering it! Bonnie said that they weren't pioneering it! She said, "We can tell you how we pioneered it out there, which was a different story."

When we left there, Kenneth Littlejohn was the engineer building the road. He had a foreman called Sinnott who used to be in the Buffalo Bill Circus doing fancy shooting and riding. He was a real character. We also had several guards, one of whom was a Texas Ranger. We had two or three other guards who always carried guns during the day. It looked more like a military camp than anything else. The Yaquis later raided the camp and killed the postmaster, so we weren't too far off by keeping ourselves prepared.

But of course those were the old days, when the cowboys in that country put on

their boots and trousers, then strapped on their guns. They thought they weren't dressed unless they put their guns on. Then they would put on their fifty-dollar hats and be all dressed. After leaving the Montano Mine, I returned to Aurora to close down that mine and mill because the values were too low to operate at a profit.

From there I went to Tonopah again to the "Divide Boom" in 1919, and sunk several shafts there trying to find something of value. While I was there I firmed a partnership with Alex Wise.

Alex Wise was a mining graduate of California in about 1900. His parents were old time Winnemucca people. In fact, his father owned nearly the whole town of Winnemucca at one time. He went to Virginia City in 1900 to teach a short course in mining to the miners on the Comstock. With his knowledge gained while teaching on the Comstock, and later leasing there, I got him to investigate several of the properties that he knew something about. We undertook to interest the Harry Payne Whitney interests of New York through Buckley Wells, Whitney's engineer, in developing and opening up the various mines on the Comstock.

In 1919, we opened one mine and had Herb Humphrey as a partner. He was associated with Bill Moffat of the Humphrey-Moffat Union Cattle Company. We, with Humphrey's help, opened up the Imperial Mine. Indications were that we had plenty of silver ore to get a mill built.

Alex Wise and I were authorized to purchase several of the properties in the Gold Hill area. These mines were the Exchequer, Alpha, Imperial, Confidence, Challenge, Yellow Jacket, Kentuck, Crown Point, the Belcher, the Segregated Belabor, the Overman and the Keystone Mines. We worked the, and were successful in developing several million

tons of ore in the Imperial-Yellow Jacket Mine areas. So a mill was authorized to be built on American Flat to have the capacity of twenty-five hundred to three thousand tons of ore per day. I became a manager of these properties which were known as the United Comstock Mines Company. Alex Wise was manager of the North End Comstock Lode Mines which included the Con Virginia.

After sufficient ore was developed and delineated, and we were ready for a mill, I brought to the attention of the Whitney interests that there wouldn't be sufficient power to run a plant of that size the year round. I recommended that they build a steam turbine plant in Rena with a high voltage power line to American Flat for the mill. Just before that expenditure was authorized, Stone and Webster Company found out about it, and persuaded the Whitney interests in New York to give them the money to build a tie line from Lake Spaulding in California. They would furnish the power over the Sierra Pacific Power lines. Anything to get power; that was all I was after! That line was built; the first line built over the Sierra Nevadas from Lake Spaulding to furnish the power for American Flat Plant. The mine furnished the money. It was to be rebated back in toto, but the mine closed down when silver dropped to twenty-eight cents an ounce. The Sierra Pacific Power Company was the beneficiary.

Up to that time the power was furnished by small power plants on the Truckee River from flumes. Those flumes would ice up in the wintertime and for a week at a time there wouldn't be sufficient power. An operation without constant power was impossible but the Company didn't know about the problem until they were ready for the mill.

It was decided to put the all-slime cyanide plant, which was the largest all-slime

gold-silver plant in the United States at that time, an American Flat at the south end of the Comstock Lode. A haulage tunnel was driven from the mill to the Comstock Lode and into the Comstock Lode for a distance of ten thousand feet to the north end of the Company's property. Then later the tunnel was advanced another thirty-five hundred feet to the Hale and Norcross Mine of the "middle mines". That haulage tunnel handled all the ore from the United Comstock Mines, and later from the Comstock Merger Mines.

The haulage tunnel was only six hundred feet deep on the Comstock vein and was driven at a time when mining was all underground. It had to be underground, because road equipment hadn't been developed like it has now. Otherwise, there would have been open pits. There could have been open cuts in the Comstock Lode from Gold Hill at Virginia City. This would have been much cheaper mining and probably the mines would be running today.

There is plenty of ore in the Comstock Lode even now. Only a fraction has been mined. The process followed in the early days was to mine out the rich ore shoots, which were very formal in shape and size. The adjoining mineralized matter, in which the rich ore shoots occurred, carried low value, in silver and gold. I consider these low grade ore bodies to be a national asset. It is a question of economics to mine them, and it's not profitable with the inflated prices of today. Although there's many millions of low grade material in place, it would be very difficult to operate in the Virginia City area in open cuts. The Comstock Lode goes right under "C" street. Still, the south end of the Lode could be mined by open cuts to a certain depth in the area of the Belcher, Crown Point, Kentuck, Yellow Jacket, Imperial group and north as far as the Exchequer Mine.

The Company bought a lot of the old properties there. I had an office in a building in Gold Hill, which had originally been the Bank of California. It had been iron-shuttered for a great many years. When we took the iron shutters down and started to revamp it for an office, there was another stone building behind it. We used to call it the potato cellar. It was full of old mine records and bank records, with many cancelled certificates and stamps, and all that sort of thing. I guess I was naive; I had everything shoveled and cleaned out. The stuff was picked over later and a number of Pony Express stamps were found. We lived there with the Joe Hawkins'. That house is the "West" house, which in 1964 sold for thirty-five thousand dollars.

The Company built a camp on American Flat, with two boarding houses, one on Gold Hill and one on American Flat. Each boarding house was to handle five hundred men. They built modern cottages at the mill on American Flat. We operated there for several years. Buckley Wells was replaced by Roscoe "Rock" Channing. He was an eminent engineer. The Whitney interests wanted to sell the United Comstock mine because they had interests in Canada in which they wanted to put their efforts and money. The Whitney interests at that time owned the Idaho-Maryland in Grass Valley, California. John Fulton (later Dean of the Mackay School of Mines) was manager. They also had a dredge in Gold Canyon near Dayton, Nevada, that Amelia Rhinehart dedicated while she was President of Mills College. The Whitneys had other properties on the Mother Lode, and dredges near Oroville, California. The United Comstock property was sold to a Cecil Rhodes Company of the Consolidated Goldfields of South Africa.

The Goldfield Consolidated of South Africa used the I. R. Mexican Company, the

Fresnillo Mining Company, as a vehicle to purchase the Whitney interests. Then the Comstock Merger Mine was organized.

In the meantime, Humphrey, Wise and myself had purchased the “middle mines.” The Merger Company wanted those mines also, so they bought them and advanced the American Flat main haulage tunnel into the Hale and Norcross mine.

Then, about 1929, silver dropped to its lowest point, between twenty-five and twenty-eight cents an ounce. The Merger Company decided they wouldn’t mine any further, so they stopped mining and sold the mines and plant with all the machinery. The concrete mill buildings are still there. When the Whitney sold, the Merger Company wanted their own staff, so I left. Alex Wise and I started mining in Six-Mile Canyon below Virginia City on the Flowery Lode.

Alex Wise and I took over the Lady Bryan, and several of the properties down in Six-Mile Canyon. The Lady Bryan had a strong vein called the Flowery Lode very similar to the Comstock. It had an intrusive diorite foot wall and an andesite hanging wall. We designed and built a two hundred ton per day all-slime cyanide plant to handle low grade gold and silver ores. That was in 1923. The ore assayed about five dollars a ton. It was interesting that in the mine, silver values were against the hanging wall and on the foot wall side was all gold, like the Comstock. We mined and milled there until 1928. I sold out to Alex Wise. Wise got hurt in the shaft, and shortly after that sold the property to Homer Gibson of Canada. Very little has been done there since.

After that, during the Depression, I went to the Con Virginia Mine. The owners wanted to open up the old Bonanza stopes on the 1650 foot level, and to work the ore and fills left by the early miners. I recommended an

underground flotation mill on the 1750 foot level, the Sutro Tunnel level, and to drop the ore directly to the mill below from the old workings. A place was evacuated for the mill in the diorite foot wall and we started to drive a raise to the 1650 level. In the meantime, we opened up some of the old stopes which had temperatures up to 120 degrees. The Company ran out of finances, so that was that. The tailings were to be piped through the Sutro Tunnel to an area adjacent to the Carson River.

From there, during the Depression, I examined many mining properties for George Wingfield. He had been hit hard in the Depression. For two or three years I looked over mining properties in the West. Then in 1935, Noble Getchell brought a property to him and I examined it.

This property was in the Potosi Range in Humboldt County out of Golconda. I reported on it as being “elephant hunting ground,” as it had a very large vein but the values were practically nil (about \$2.00 per ton). It was decided to go ahead and do some work by driving a cross-cut tunnel about two hundred feet below the croppings and see what the vein looked like at that elevation. When intersected, the vein at that elevation was all ore. And from that day to this (1965) the mine has been in ore. That mine is in a fissure, along a regional fault, in the shale with fault gouge as a hanging wall. The foot wall is shaley limestone lying on a diorite granite intrusion. Scheelite tungsten is found in numerous places on the Company’s property in contact with the diorite.

After developing ore with three or four tunnels, Mr. Wingfield decided it was time for a mill. So he financed it with his friends in the East, and organized the Getchell Mine Company. I designed the flow sheet and designated the machinery to be used in

the mill. The mill treated one thousand tons per day in a sand leach plant and an all-slime countercurrent cyanide plant.

In developing the mine, we found the vein carrying considerable arsenic minerals which did not show up in the croppings, so it was necessary to make the ore amenable for cyanidation by roasting. The mill included two two-hundred and sixty-foot long by eight-foot diameter rotary furnaces to volatilize off the arsenic and make an oxidized ore product amenable for cyanidation.

Then later, in 1942, the Government's war order #L208 prohibited the mining of gold and silver. So we closed down the gold plant and investigated the tungsten area, which fortunately developed very favorably along the contact of the limestone and diorite. The tungsten deposits were contact metamorphic replacement deposits. It was ascertained that there were ore bodies wherever the limestone was a soluble limestone in contact with the diorite, the ore bodies were not continuous but were found in eight different areas within a distance of eight miles. The flotation plant, which was erected in the cyanide plant, handled one thousand tons per day of tungsten ore. Tungsten concentrates were produced all during World War II and Korean "police action" war.

The Getchell Mine was about the third largest producer of tungsten in the United States during the war period. Tungsten production was stopped after the Korean War, but the Government continued to purchase tungsten concentrates under the Government purchase program until 1957, when the mining of tungsten ore ceased. Then the Getchell mill was revamped. It was necessary to revamp the mill to handle the arsenic ore in a better way than the Company had with the rotary furnaces. So experiments with a fluo-solids reactor were carried out. This process

has proven successful. Altogether the mine, up to 1960, produced about sixty million dollars in both gold and tungsten.

In preparing the Getchell Mine, it was necessary to build a powerline forty-two miles from Winnemucca, and also a telephone line and a suitable road. There was a company town of about eighty cottages, plus a boarding house and twelve small bunk houses. I lived at the Getchell Mine while building the plant, but later I made weekly visits.

The Getchell Mine comprised an area of approximately twenty-two thousand acres. Water is furnished from deep wells on Kelly Creek by pumping about eight hundred gallons per minute, raising it about a thousand feet in a distance of about six miles.

After the deaths of Mr. Wingfield and Mr. Getchell, the mine was sold to the Goldfield Company. The present manager is William Hisle.

When mining was in the doldrums in the thirties, I was looking for mining properties for George Wingfield. In Nye County, I met Howard P. Eells, Jr. whose company (Basic, Inc.) has a refractory business in Cleveland, Ohio. He was looking for magnesium deposits, and acquired the brucite and magnesite deposits at Gabbs, Nevada. When World War II was coming along, the Government wanted magnesium metal. Howard Eells was very dynamic and had a wonderful imagination, and he realized that he had a deposit large enough to supply all the Government could want. He was president of his company and principal owner. He realized his company wasn't large enough to build a plant. The Government advanced one hundred and twenty million dollars to build a plant for magnesium metal.

Eells picked out a place in Las Vegas on the "Strip" for the plant, but that area wasn't suitable. So he went down closer to Boulder

City to what is now Henderson and built the Basic (Magnesium) Plant. He should be considered the father of the non-metallics industry in Nevada. Of course, he wasn't alone producing magnesium in the United States. The Dow Chemical people produced a lot of it too. But he gave Nevada an impetus to start the industries which are now in those enormous buildings at Henderson. I believe people of Nevada should give him due credit for all he has done for Nevada, which I think is as much as any mining man has done in Nevada.

My son, Royce, was manager of the Manganese Inc. plant at Henderson until it closed down a few years ago. He was also the Assistant Secretary of the Interior during the Eisenhower Administration. He went out with the Eisenhower Administration and is now with the Duval Corporation, a mining company producing sulfur, potash and copper in several states, including Nevada at Battle Mountain.

While I was in charge of the operations at Getchell Mine, I became interested in a low-grade gold-silver mine south of Golconda in Humboldt County, Nevada. I built a four hundred ton all-slime cyanide plant as a personal adventure at the Adelaide-Crown Mine. That was shortly before 1942. I had just started operation. when public law #L208 came along, and the Government closed the mine.

At present time (1965) I am doing a consulting mining practice operating out of Reno and have acquired interest in several properties. One of them is the Atlanta gold-silver-uranium mine near Pioche, upon which a mill is being erected. I also am interested in some properties in the Mohave Desert in California, and the Buckhorn Mine out of Eureka, Nevada.

During all this time, Bonnie and I had been operating a ranch in Fallon. It was a six

hundred acre ranch, part of the old Lem Allen ranch. We recently sold it to our foreman, Dick Bass, who was with us when he was a young boy, and his son, Raymond Barns. My wife liked ranching, she knew more about ranching than most ranchers.

The ranch was at St. Claire. It was a Pony Express station then it was robbed in the early 1860's. When Dick Bass, the foreman, was plowing in the orchard during the 1930's, he uncovered the cache of more than twelve hundred dollars in twenty-dollar gold pieces. It was the time when it wasn't legal to have gold, so we followed Government instructions and turned it all into the bank.

CHAPTER TWO

In civic affairs I feel that I haven't done very much. I was a University of Nevada Regent from 1950 to 1958. First Malcolm Love was the President and then Minard Stout, later Charles J. Armstrong. I wanted to be on the Board of Regents to help out the mining school and help acquire a Student Union building for the University.

President Minard Stout was a very strict disciplinarian who believed that authority and responsibility were married, and there could be no separation. I believe he gave great impetus to the University. I think the people of Nevada realized they had to spend more money and have the best and very high-grade and well-paid professors and instructors.

It was during that period that the Regents made a very fine purchase in the University farm. The Regents also started Nevada Southern; picked out the area in Las Vegas and started that branch of the University. As I mentioned, it was during that period that Nevada citizens realized, although some of it was unpleasant, that they had a University

and it had to be supported properly. I believe it is today a very outstanding University.

When I went to the University back in 1907 and 1908, the Mackay School of Mines was the principal college, in that it gave the University more publicity than the other colleges of the University. Even then, Mackay School of Mines men were scattered all over the world and had made wonderful records. There's no reason why the Mackay School of Mines can't be the outstanding mining college in the United States today; in fact, I think it is.

My wife's father, Dr. George H. Thoma, who was a doctor in Eureka, also practiced at Hamilton where Jot Travis had a government stage contract to deliver supplies to all the Indian reservations in the West. Dr. Thoma brought Jot Travis' son, Wesley Elgin Travis, into the world in 1870. The friendship with Mr. Travis (we called him "Buck" Travis) was maintained over many years. In later years, he was chairman of the board of Greyhound Stage Lines. He was always interested in

different mining camps, and liked to go around and see where his father's stages served the different mining camps. On one of the trips we took together, we arrived in Pioche at night. We asked the bartender, at the hotel if there were any old-timers around. He said yes, that he was an old-timer. Buck asked him how long he had been there and he said about twenty-five years. Buck said that he wanted somebody who had been there a long time. Travis was in his late seventies then. The bartender said then that there was an article written by the son of the editor of the paper. He threw the last copy out on the bar, and on the front page was a historical notice that Sheriff Travis, Buck Travis' uncle, had brought in a bad man to jail on that day many years before. It was quite a coincidence.

Buck Travis had a brother who died in infancy in Hamilton. He wanted to find the grave and have it moved to Chicago, where his mother was buried. So we went through the eatery in Hamilton, and looked at the different headboards. At last we found the right number of letters, but we couldn't distinguish the name. We took a photograph of the headboard and had it blown up in Hollywood, and sure enough it was the brother. I took the headboard and had thirty different coats of plastic put on the name to make it last forever, then put a fence around the grave and fastened the headboard to the fence.

Buck Travis didn't seem to be very much interested in Nevada at the time. He was talking about his will all the time, though, and my wife asked him why he didn't leave some of his money to Nevada as long as he was born here. From that, we followed it up for several years. We agreed to leave Nevada something, and he left enough (\$800, 000) to build the nucleus of the Jot Travis Student Union building. He told a. he was going to leave much

more, but he was taken off suddenly. He was an elderly man' eighty-three at that time. Mr. Travis was a husky man, about six foot four, a great big fellow. He knew all the western miners like Dan Jackling, Mark Requa and George Wingfield.

I should say something about my family. I have a daughter and a son. The daughter is Alice, my son is Royce. Alice is married. She is Mrs. Albert Paulsen and lives in Atherton, California. She has four children, Bonnie, Richard, Royce, and Jon, three boys and one girl Royce lives in Tucson, Arizona, and has two girls and one boy, Helen, Susan, and Royce III. The greatest thing I have accomplished, I think is to live as long as I have and to be as happily married as I have been.

APPENDIX: MAP OF COMSTOCK MINES

See next page.

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